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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/868,972 06/04/97 GUPTA

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EXAMINER

PHAM, B

ART UNIT

PAPER NUMBER

2731

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Amr

Office Action Summary

Application No.

08/868,972

Applicant(s)

AMIT GUPTA, RAPHAEL ROM

Examiner

Brenda Pham

Group Art Unit

2731

☒ Responsive to communication(s) filed on May 23, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire THREE month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-30 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 2, 6-19, and 21-30 is/are rejected.

☒ Claim(s) 3-5 and 20 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

1. This correspondence is in response to the applicant's response filed 5/23/2000. The Appeal Brief has been considered. The final rejection has been withdrawn. Claims 1-30 are currently pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, 7, 10, 11, 19, 21 and 22 are rejected under 35U.S.C. 102(b) as being anticipated by **Subramanian et al** (U.S. Pat. 5,519,707). Hereinafter referred to Subramanian.

- Consider claim 1, **Subramanian** discloses a switching node, comprising:
(see figure 6) a switching matrix (401- 405), and a controller (202) to control said switching matrix, said controller configured to set up at least one group of virtual circuits to respective one or more destinations as a virtual circuit bunch (virtual service path 421,422,423,424,425).

- Consider claim 2, **Subramanian** discloses the switching node as discussed above,
Subramanian further teaches a switching node is an ATM switch (see Abstract)

- Consider claim 6, **Subramanian et al** teaches a limitation of said controller is configured to assign digital information from a source to one of a plurality of virtual circuits of a virtual circuit bunch (see figure 4C)

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-Consider claims 7 and 19, **Subramanian** further teaches a limitation of the assignment of digital information from a source to one of a plurality of virtual circuits of a virtual circuit bunch is done without assigning said one of a plurality of virtual circuits to a connection, "The disclosed method and apparatus provides for efficient communication of service requests and service grants without requirement to establish new communications paths between the individual switches and the central service provider for each request" (see abstract).

- Consider claim 10, **Subramanian** discloses a computer apparatus for connection to a switching node comprising (see Fig.3A): a bus; a input device (305), connected to a bus; a communications interface (203) connected to bus; a processor (201) connected to bus, said processor configured to receive an input from a user over said input device and to generate a single request to said switching node to establish a plurality of virtual circuits to respective one or more destinations as a virtual circuit bunch (see figure 4C, col 4 line 59-61 and abstract) "The disclosed method and apparatus provides for efficient communication of service requests and service grants without requirement to establish new communication paths between the individual switches and the central service provider for each request".

-Consider claim 11, **Subramanian** discloses in a digital switching network having a plurality of interconnected nodes, a method of allocating virtual circuits, comprising the step of: providing an element for performing the step of establishing a plurality of virtual circuits from one node to at least one other node as a virtual circuit bunch in response to a single request (see col. 9, lines 59-61) "providing for a single set-up of all virtual service channels within the virtual service path thus avoiding the need for additional set-up and tear down overhead".

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- Consider claim 21, **Subramanian** discloses a system for the transmission of digital communications, comprising (see Fig. 4A): a user communication devices (412, 413, 415); a partially interconnected switching nodes (401, 402, 404, 405), each node serviced by a node controller, servicing said user communications devices; in which at least one of said node controllers is configured to set up a group of virtual circuits to respective one or more destination as a virtual circuit bunch (see col. 8, line 1-5) “network clients, such as client 214, can request the supervisor 202 to set-up and tear down virtual paths/virtual channels over a signaling channel”.

- Consider claims 16 and 22, **Subramanian** discloses a system as discussed above. **Subramanian** further teaches a virtual circuit from a user at one node is connected to a user at a destination node using a virtual circuit from virtual circuit bunch (see col. 7, line 76) “signaling services allowing each client to communicate with the supervisor 202 to establish user-to-user connectivity (e.g., call set-up and tear-down)”.

4. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by **Fisk** (US Pat. 5,274,643).

-Consider claim 17, **Fisk** discloses a method of allocating virtual circuits in a switching system, comprising the steps of: identifying virtual circuits at a node going to a common destination node; and aggregating those virtual circuits into a virtual circuit bunch (see figure 6, element 360, col. 5, lines 40) “in order for the connection to be placed in the virtual path, the point to point connection of the virtual path leader must match”.

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5. Claims 8, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Subramanian** (US Pat. No. 5,519,707).

-Consider claim 8, **Subramanian** discloses a system and method as discussed above.

Although **Subramanian** does not teaches that the virtual circuits of a virtual circuit bunch going to a single destination may be routed over different paths. Yet, it is well known in the art that data going to a single destination may be routed over different paths to accomplished the shortest or best path. For this reason, it would have been obvious to those of ordinary skill in the art at the time of the invention was made to modify **Subramanian** system and method to includes this claim limitation.

-Consider claim 12, **Subramanian** discloses a system and method as discussed above.

Although it does not includes setting up switching tables, it is well known that when a node has acknowledged the request for setting up a communication path, it is necessary to rewrite the interconnection switching table, called VPI (virtual path identifier) table, that is provided in each node for specifying the cross connection between incoming transmission paths and outgoing transmission paths so that the information can transmitted from one end node of the path reaches the other end node. For this reasons, it would have been obvious to those of ordinary skill in the art at the time of the invention was made to implement the switching system of **Subramanian** to includes setting up switching table.

-Consider claim 18, **Subramanian** discloses a system and method as discussed above.

Although **Subramanian** does not set forth the step of transfer digital information from a source to a virtual circuits of a virtual circuit bunch, it is well known in the art that in an ATM data

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networks, data is conveyed in packets called cells including a header and payload of fixed length, a header containing a virtual circuit group identifier and a virtual circuit identifier that define a logical channel between two nodes of network. Thus, to assign digital information from a source to one of a plurality of virtual circuits of a virtual circuit bunch is base on the virtual circuit identifier of each cell and is inherent in the method of **Subramanian**.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Subramanian** (US Pat. No. 5,519,707) in view of **Suzuki** (US Pat. No. 4,884,263).

Consider claim 9, **Subramanian** discloses a system and method as discussed above. **Subramanian** however, does not teach the step of retransmit digital data from an assigned virtual circuit identifier to an alternate VCI of the same or different port going to the same destination. **Suzuki**, on the other hand, discloses the steps of re-establish a new virtual circuit through the network in the event of a trouble or heavy traffic in the virtual circuit (see col. 1, line 33-37). Therefore, it would have been obvious to those of ordinary skill in the art at the time the invention was made to modify the switching system of **Subramanian** with the teaching of providing the steps of retransmit digital data as taught by **Suzuki** to re-routing the message packets to the second logical channel when the abnormal condition is detected in the first virtual circuit.

7. Claims 14, 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Subramanian** (US Pat. No. 5,519,707) in view of **Fisk** (US Pat. No. 5,274,643).

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-Consider claim 14, **Subramanian** discloses a system and method as discussed above. **Subramanian** et al however, does not explicitly specifies the number of virtual circuits to be established to each destination. **Fisk**, on the other hand, teaches this limitation (see figure 6, col. 5, lines 58-70) "If the total number of virtual circuit members of a virtual path is equal to a maximum group member number (VPM_MAX), the virtual path is packed or full and a number virtual path is started." Thus, it is clearly shows by **Fisk** that the number of virtual circuits to be established at each destination so that the number of virtual circuits can be compared to the predetermined maximum group number, to determined if it can be grouped with the present virtual path. Therefore, it would have been obvious to those of ordinary skill in the art at the time of the invention was made to modify the method as discussed above to include the request specifies the number of virtual circuits as set forth by **Fisk**.

-Consider claim 15, **Subramanian** discloses a system and method as discussed above. **Subramanian** however, fails to teach the step for specifies the level of service to be provided by one or more virtual circuit. **Fisk**, on the other hand, teach this limitation (see col. 5, lines 41-55) "in order for the connection to be placed in the virtual path, the point to point connection of the virtual path leader must match, the virtual circuit must have the same routing restrictions and the same class of service." Therefore, it would have been obvious to those of ordinary skill in the art at the time of the invention was made to modify the system and method of **Subramanian** with the teach of **Fisk** in order for the connection to be placed in the virtual path.

-Consider claim 24, **Subramanian** discloses a system as discussed above, however, it does not teach the step of aggregating those virtual circuits into a virtual circuit bunch. **Fisk**, on

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the other hand, teach the above limitation (see figure 3, element 50) “group virtual circuit to virtual paths.” Thus, it would have been obvious to those of ordinary skill in the art at the time the invention was made to modify the system of Subramanian with the teaching of providing the step of aggregating virtual circuits into a virtual circuit bunch as taught by **Fisk** so that to provide minimum cost to each pass through a topology design.

8. Claims 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Subramanian** (U.S. Pat. No. 5,519,707) in view of **Hiller** (U.S. Pat. No. 5,345,445).

-Consider claim 13, **Subramanian** discloses a system as discussed above.

Subramanian, however, does not teach the step of request specifies a plurality of destinations.

Hiller, on the other hand, teaches this limitation (see figure 15, element 1200). Element 120 of figure 15 shows the step of receiving path request. Requesting a path is inturn specifies a request of plurality of destinations because a virtual circuit path is the collection of plurality of virtual circuits.

—-Consider claim 26, **Subramanian** discloses a system as discussed above, however, it does not teach the limitation for allocating a virtual circuit. **Hiller**, on the other hand, shows the above limitation (see figure 15, element 1212 and figure 15). Thus, it would have been obvious to those of ordinary skill in the art at the time the invention was made to modify the system of **Subramanian** with the teaching of providing the instructions for allocating a virtual circuit as

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taught by **Hiller** so that if no paths are available on active virtual circuits for the path request, then a request is made to allocate an additional virtual circuit.

-Claim 23 is rejected for the same reasons as set forth in claim 21.

-Claim 25 is rejected for the same reasons as set forth in claim 18.

-Claims 27-30 are rejected for the same reasons as set forth in claim 23-26, respectively.

Allowable Subject Matter

9. Claims 3-5 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

(703) 308-6743, (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).


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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Pham whose telephone number is (703) 308-0148. The examiner can normally be reached on Monday-Thursday from 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham, can be reached on (703) 305-4378.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Brenda Pham
August 11, 2000


CHI H. PHAM
SUPERVISORY PATENT EXAMINER
GROUP 2700 8/14/00